

### **What is claimed is:**

- [Claim 1]** 1. A liquid-proof protective-apparel sleeve, comprising:
- a tubular inner piece of membrane laminated or coated fabric including a stitched seam along its length; and
  - a tubular outer piece of membrane laminated or coated fabric generally surrounding the inner piece, the outer piece including a stitched seam along its length which is circumferentially offset from the seam of the inner piece, the stitched seams being generally free of a seam sealant.
- [Claim 2]** 2. The sleeve of claim 1 wherein the sleeve is Level-4-barrier qualified.
- [Claim 3]** 3. The sleeve of claim 1 wherein the inner piece is connected to the outer piece.
- [Claim 4]** 4. The sleeve of claim 3 wherein the sleeve includes a first end and a second end, and the inner piece is connected to the outer piece at the first end.
- [Claim 5]** 5. The sleeve of claim 4 wherein the first end of the sleeve is a cuff end.
- [Claim 6]** 6. The sleeve of claim 4 wherein the inner piece is connected to the outer piece at the second end.
- [Claim 7]** 7. The sleeve of claim 3 wherein the inner piece is bonded to the outer piece.
- [Claim 8]** 8. The sleeve of claim 1 wherein the inner-piece membrane laminated or coated fabric includes a fabric layer and a membrane layer.
- [Claim 9]** 9. The sleeve of claim 8 wherein the inner piece defines an interior space for receiving at least a portion of a user's arm, the fabric layer of the inner-piece membrane laminated or coated fabric facing the interior space.
- [Claim 10]** 10. The sleeve of claim 1 wherein the outer-piece membrane laminated or coated fabric includes a fabric layer and a membrane layer.

**[Claim 11]** 11. The sleeve of claim 10 wherein the fabric layer of the outer-piece membrane laminated or coated fabric faces exteriorly of the sleeve.

**[Claim 12]** 12. The sleeve of claim 1 wherein the inner-piece membrane laminated or coated fabric includes first and second fabric layers and a membrane layer therebetween.

**[Claim 13]** 13. The sleeve of claim 12 wherein the inner piece defines an interior space for receiving at least a portion of a user's arm, one of the fabric layers of the inner-piece membrane laminated or coated fabric facing the interior space.

**[Claim 14]** 14. The sleeve of claim 1 wherein the outer-piece membrane laminated or coated fabric includes first and second fabric layers and a membrane layer therebetween.

**[Claim 15]** 15. The sleeve of claim 14 wherein one of the fabric layers of the outer-piece membrane laminated or coated fabric faces exteriorly of the sleeve.

**[Claim 16]** 16. The sleeve of claim 1 wherein the inner-piece membrane laminated or coated fabric and the outer-piece membrane laminated or coated fabric each include a first fabric layer and a membrane layer.

**[Claim 17]** 17. The sleeve of claim 16 wherein the inner and outer pieces define a region therebetween, the membrane layers of the pieces confronting the region.

**[Claim 18]** 18. The sleeve of claim 17 wherein at least one of the pieces further includes a second fabric layer, the membrane layer being positioned between the first and second fabric layers of the one of the pieces.

**[Claim 19]** 19. The sleeve of claim 18 wherein the second fabric layer is positioned between the tubular region and the membrane layer.

**[Claim 20]** 20. The sleeve of claim 8 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

[Claim 21] 21. The sleeve of claim 10 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

[Claim 22] 22. The sleeve of claim 16 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

[Claim 23] 23. The sleeve of claim 8 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

[Claim 24] 24. The sleeve of claim 10 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

[Claim 25] 25. The sleeve of claim 16 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

[Claim 26] 26. The sleeve of claim 1 further including a cuff.

[Claim 27] 27. A liquid-proof protective-apparel garment, comprising:

- a torso section;

- a first liquid-proof sleeve connected to the torso section; and

- a second liquid-proof sleeve connected to the torso section,

the first and second sleeves each comprising:

- a tubular inner piece of membrane laminated or coated fabric including a stitched seam along its length; and

- a tubular outer piece of membrane laminated or coated fabric generally surrounding the inner piece, the outer piece including a stitched seam along its length which is circumferentially offset from the seam of the inner piece, the stitched seams being generally free of a seam sealant.

[Claim 28] 28. The garment of claim 27 wherein the sleeves each include a first end and a second end, the second end of each sleeve being stitched to the torso section.

**[Claim 29]** 29. The garment of claim 27 wherein the sleeves are Level-4-barrier qualified.

**[Claim 30]** 30. The garment of claim 27 wherein, for each sleeve, the inner piece is connected to the outer piece.

**[Claim 31]** 31. The garment of claim 30 wherein the sleeves each include a first end and a second end, and, for each sleeve, the inner piece is connected to the outer piece at the first and second ends.

**[Claim 32]** 32. The garment of claim 30 wherein, for each sleeve, the inner piece is bonded to the outer piece.

**[Claim 33]** 33. The garment of claim 27 wherein, for each sleeve, the inner-piece membrane laminated or coated fabric includes a fabric layer and a membrane layer.

**[Claim 34]** 34. The garment of claim 33 wherein, for each sleeve, the inner piece defines an interior space for receiving at least a portion of a user's arm, the fabric layer of the inner-piece membrane laminated or coated fabric facing the interior space.

**[Claim 35]** 35. The garment of claim 27 wherein, for each sleeve, the outer-piece membrane laminated or coated fabric includes a fabric layer and a membrane layer.

**[Claim 36]** 36. The garment of claim 35 wherein, for each sleeve, the fabric layer of the outer-piece membrane laminated or coated fabric faces exteriorly of the sleeve.

**[Claim 37]** 37. The garment of claim 27 wherein, for each sleeve, the inner-piece membrane laminated or coated fabric includes first and second fabric layers and a membrane layer therebetween.

**[Claim 38]** 38. The garment of claim 37 wherein, for each sleeve, the inner piece defines an interior space for receiving at least a portion of a user's arm, one of the fabric layers of the inner-piece membrane laminated or coated fabric facing the interior space.

**[Claim 39]** 39. The garment of claim 27 wherein, for each sleeve, the outer-piece membrane laminated or coated fabric includes first and second fabric layers and a membrane layer therebetween.

**[Claim 40]** 40. The garment of claim 39 wherein, for each sleeve, one of the fabric layers of the outer-piece membrane laminated or coated fabric faces exteriorly of the sleeve.

**[Claim 41]** 41. The garment of claim 27 wherein, for each sleeve, the inner-piece membrane laminated or coated fabric and the outer-piece membrane laminated or coated fabric each include a first fabric layer and a membrane layer.

**[Claim 42]** 42. The garment of claim 41 wherein, for each sleeve, the inner and outer pieces define a tubular region therebetween, the membrane layers of the pieces confronting the tubular region.

**[Claim 43]** 43. The garment of claim 42 wherein, for each sleeve, at least one of the pieces further includes a second fabric layer, the membrane layer being positioned between the first and second fabric layers of the one of the pieces.

**[Claim 44]** 44. The garment of claim 43 wherein, for each sleeve, the second fabric layer is positioned between the tubular region and the membrane layer.

**[Claim 45]** 45. The garment of claim 33 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

**[Claim 46]** 46. The garment of claim 35 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

**[Claim 47]** 47. The garment of claim 41 wherein the fabric is formed of a material selected from the group consisting of a polyester, a co-polyester, a polypropylene, a nylon, a polyethylene, a cotton, and combinations thereof.

**[Claim 48]** 48. The garment of claim 33 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

**[Claim 49]** 49. The garment of claim 35 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

**[Claim 50]** 50. The garment of claim 41 wherein the membrane is formed of a material selected from the group consisting of a polyurethane, a polyester, a nylon, a polyethylene, and combinations thereof.

**[Claim 51]** 51. The garment of claim 28 further including a cuff connected to the first end of each sleeve.

**[Claim 52]** 52. A liquid-proof protective-apparel sleeve, comprising:  
a tubular inner piece of membrane laminated or coated fabric including a stitched seam along its length; and  
a tubular outer piece of membrane laminated or coated fabric generally surrounding the inner piece, the outer piece including a stitched seam along its length which is circumferentially offset from the seam of the inner piece.